

Project Delivery Tools continued

Value Engineering

WSDOT has been using this tool since 1987. Value Engineering is a process that breaks components of a project into functions. A team of experts meets for three to five days during the project development process to identify solutions that will satisfy the functions. Value Engineering teams start with a small group of experts in the required disciplines (Design, Construction, Bridge, Environmental, Maintenance). Then we add partners from outside such as WSDOT, cities, counties, other agencies, outside funding sources, and permitting agencies. Value Engineering has been successful on complex projects with interchanges, major structures, new alignments, extensive traffic control, or unusually high cost. Value Engineering has not been beneficial on small, simple projects, such as paving projects. Value Engineering success has not come by changing the scope or design; it has often come from removing constraints or drivers set by others.

For more details, see <http://www.wsdot.wa.gov/eesc/design/VE/>



Washington State  
Department of Transportation



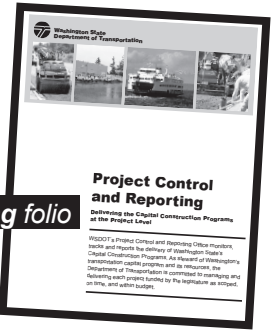
SR 167, Tacoma to Puyallup New Freeway Construction		10 Year-Project in Full
<b>Description:</b> •Complete SR 167 from Puyallup to the Port of Tacoma with a new freeway •Includes an HOV lane in each direction from SR 167 near Puyallup to I-5 •Includes four lanes between I-5 and SR 520 near the Port of Tacoma	<b>Schedule:</b> Begin Construction: 2007 - 2008 End Construction: 2010 - 2012 Letting construction in year 2008, approximately request construction	<b>CEVP Results:</b> <p>There is a 10% chance the cost is less than \$ 1.6 Billion There is a 50% chance the cost is less than \$ 1.7 Billion There is a 90% chance the cost is less than \$ 1.8 Billion</p>
<b>Project Cost Range</b> There is a 10% chance the cost is less than \$ 1.6 Billion There is a 50% chance the cost is less than \$ 1.7 Billion There is a 90% chance the cost is less than \$ 1.8 Billion	<b>Risk issues that could impact project cost or schedule:</b> •Project requires the acquisition of large amounts of property in a corridor where land is rapidly developing •Design in acquiring new properties will result in significant cost increases to the project •Project will be constructed near Hoodless Creek, Puget Creek, and other water bodies •Environmental permitting and mitigation requirements may change significantly between now and construction, leading to increase costs and cause delays •Project includes a major new interchange where Interstates 5 and SR 167 connect. Design of this interchange involves Pacific Highway Administration (PWA) approval of a number of design features. If not approved by PWA, changes in the design would result in increased cost and time for the project •Limited number of construction are qualified and available to pursue a project this large, increasing contract costs and project delays	
<b>Benefits this project would provide:</b> •Provides a key link for freight to move to and from the Port of Tacoma •Reduces congestion by offering commuters, business, and shippers an alternative to I-5 •Reduces congestion and improve safety on local roads by connecting SR 167 to I-5		
<b>Level of Project Design:</b> Low Medium High	June 3, 2003	

Cost Risk Assessment

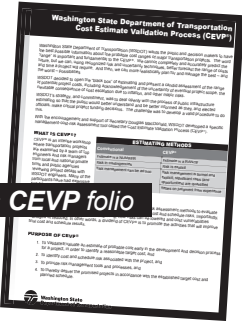
WSDOT created the Cost Estimate Validation Process (CEVP®) in June of 2002. It is an intense workshop where transportation projects are examined by a team of top engineers and risk managers from local and national private firms and public agencies, who review project details with WSDOT engineers. The CEVP® workshop team uses systematic project review and risk assessment methods to identify and describe cost and schedule risks, and evaluate the quality of the information at hand. Importantly, the process examines, from the very beginning, how risks can be lowered and cost vulnerabilities can be managed or reduced. A dividend of CEVP® is the promotion of activities that will improve final cost and schedule results.

For more details see <http://www.wsdot.wa.gov/projects/cevp/default.htm>

See also: Project Control and Reporting folio



See also: What is CEVP folio



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# Managing Project Delivery

## Delivering the Capital Construction Programs at the Project Level

Over the last few years, the Washington State Department of Transportation (WSDOT) has created this set of project management tools and processes for project managers and team members.

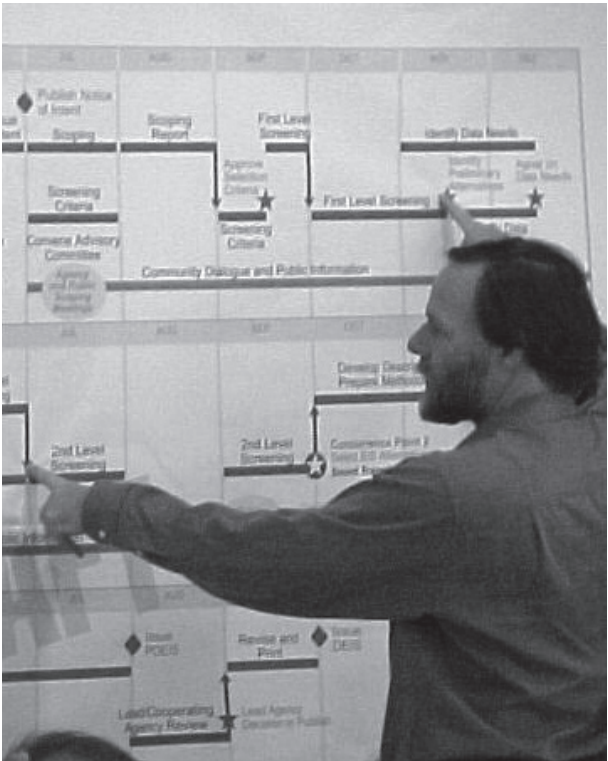
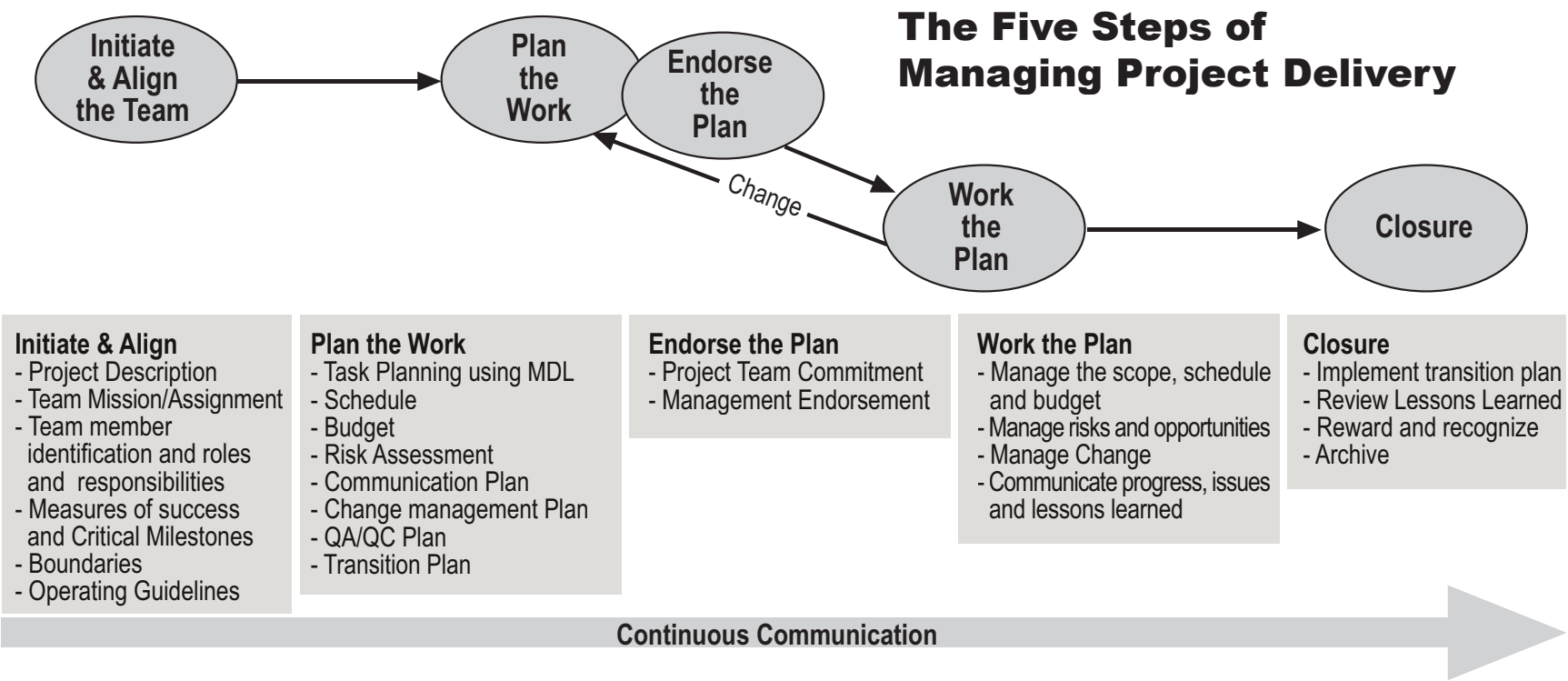
Managing Project Delivery (MPD) is the backbone for project managers to effectively and efficiently deliver projects on time and within scope and budget.



Managing Project Delivery (MPD)

Managing Project Delivery (MPD) is the standard practice adopted by WSDOT to manage projects and provides a method to meet the WSDOT Management Principles. (See WSDOT Management Principles at [www.wsdot.wa.gov/accountability/mgmtprinciples.htm](http://www.wsdot.wa.gov/accountability/mgmtprinciples.htm))

Project management requires the application of skills, knowledge, tools, and techniques to deliver the project on time, within budget, and according to specifications. There are proven industry standards for project management, such as the Project Management Body of Knowledge (PMBOK) through the Project Management Institute (PMI). The MPD process, as adopted by WSDOT, is based upon those industry standards.



The five steps of MPD can be further simplified into two basic phases:

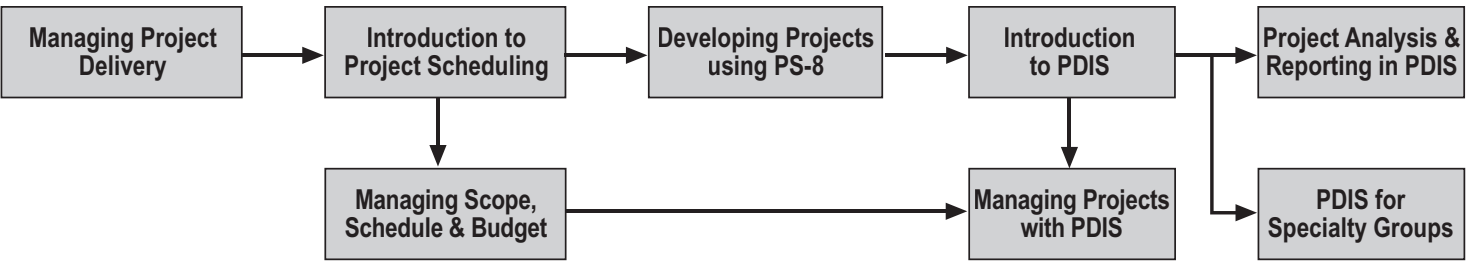
- Preparation – “Plan the Work”
- Execution – “Work the Plan”

In a typical project application, planning the work (the first two steps) will constitute approximately 10% of the total project effort and time. The remaining three steps constitute approximately 90% of the project effort and time.

Project Delivery Tools

- Managing Project Delivery process (MPD)
- Project Delivery Training
- Project Delivery Information System (PDIS)
  - o Master Deliverable List (MDL)
  - o Scheduling Software
    - Highways - Project Scheduler 8 (PS8)
    - Ferries & Urban Corridors - Primavera (P3E)
- Value Engineering
- Cost Risk Assessment
- Project Control and Reporting

Project Delivery Training



Project Delivery Information System (PDIS)

The Project Delivery Information System (PDIS) is a tool to assist in effectively and efficiently managing project schedules, resources, and the resulting costs to complete projects. PDIS enhances communication and coordination between staff engaged in project and program delivery at the project team, office, region, and statewide levels. PDIS is designed for use in WSDOT’s Highway Design and Construction Program. It is intended as a project scheduling, tracking, and reporting tool for program managers, project managers, their designees, and specialty group project contacts.

Master Deliverables List (MDL)

PE-S-8	Hydraulics
PE-S-8.1	Preliminary Hydraulics Analysis
PE-S-8.1.1	Stormwater Analysis
PE-S-8.1.2	Closed System Analysis
PE-S-8.1.3	Chronic Environmental Deficiency Analysis
PE-S-8.1.4	Recommended Best Management Practices (BMPs)

The Master Deliverables List (MDL) is a standardized naming convention that allows the WSDOT to evaluate deliverables from multiple projects enterprise wide.

